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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/655,772

09/05/2003

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EXAMINER

KAHELIN, MICHAEL WILLIAM

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/655,772	Applicant(s) ZHOU ET AL.	
	Examiner MICHAEL KAHELIN	Art Unit 3762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21,22,24-26 and 28-40 is/are pending in the application.
- 4a) Of the above claim(s) 34-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21,22,24-26 and 28-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 34-40 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/28/2007.
2. Applicant's election without traverse of claims 21, 22, 24-26, and 28-33 in the reply filed on 11/28/2007 is acknowledged.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 29 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear how the gradient composition can be both "alternating layers" (of claim 21) and "an approximately linear gradient" (of claim 29) because the two concepts are mutually exclusive.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 3762

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 21, 24, 26, 28, 30, 31, and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Brennen et al. (US 2005/0075709, hereinafter "Brennen").

7. In regards to claim 21 Brennen discloses an electrode body having a substrate (122) and a coating comprising a gradient composition comprised of a plurality of alternating layers of platinum and iridium oxide (Fig. 4 and par. 0030). Although Brennen discloses only a single layer of platinum and a single layer of iridium oxide, these two layers are a "plurality," and they alternate, thus meeting the claim language. In other words, the gradient composition requires a plurality of layers, but does not require a plurality of platinum layers or a plurality of iridium oxide layers.

8. In regards to claim 24, the surface is rough because it is comprised of sintered particles (par. 0030).

9. In regards to claim 26, the surface is abraded (par. 0008).

10. In regards to claim 28, the gradient composition is electroplated (par. 0030).

11. In regards to claim 30, 0% and 100% are complementary fractions. Therefore, if a layer is pure (100%) platinum, it has a complementary fraction (0%) of iridium oxide.

12. In regards to claim 31, the composition is shown to vary stepwise (Fig. 4).

Art Unit: 3762

13. In regards to claim 33, the substrate surface is a platinum trace (par. 0030), and platinum is biocompatible because it is implanted into the human body.

14. Claims 21, 30, 31, and 33 are rejected under 35 U.S.C. 102(a) and (e) as being anticipated by Chow et al. (US 6,389,317, hereinafter "Chow").

15. In regards to claim 21 Chow discloses a plurality of electrodes (Fig. 4) having a substrate (170), and a surface coating of platinum and iridium oxide (86, 88, and col. 7, line 19). Although Chow discloses only a single layer of platinum and a single layer of iridium oxide, these two layers are a "plurality," and they alternate, thus meeting the claim language. In other words, the gradient composition requires a plurality of layers, but does not require a plurality of platinum layers or a plurality of iridium oxide layers.

16. In regards to claim 30, the fractions of platinum and iridium oxide are complementary (1/1 and 0/1 are complementary fractions, regardless of the interaction between the two layers at the interface).

17. In regards to claim 31, Figure 4 shows a stepwise variation in the gradient composition.

18. In regards to claim 33, the substrate comprises platinum, which is biocompatible (col. 7, line 23).

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3762

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

21. Claims 22, 29, and 32 are rejected under 35 U.S.C. 102(e) as anticipated by Brennen or, in the alternative, under 35 U.S.C. 103(a) as obvious over Brennen in view of Fabian et al. (US 4,392,927, hereinafter "Fabian"). Brennen discloses the essential features of the claimed invention including utilizing fractalized platinum (par. 0030), of which "platinum gray" is a specific type; and because of this fractalized surface, there is an approximately linear gradient from platinum to iridium oxide.

22. Alternatively, Brennen discloses the essential features of the claimed invention except for a platinum material that is platinum gray or a linear gradient from platinum to iridium oxide. Fabian teaches an electrode with an approximately linear gradient from interior to exterior (Table I) to provide the predictable result of conserving costly electrode materials and provide mechanical strength. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to

Art Unit: 3762

provide Brennen's invention with an approximately linear gradient from platinum to iridium oxide to provide the predictable result of conserving costly electrode materials and provide mechanical strength.

23. Further, Brennen discloses the claimed invention but does not disclose expressly the platinum gray material. It would have been an obvious matter of design choice to a person of ordinary skill in the art to modify the fractalized platinum as taught by Brennen with the platinum because applicant has not disclosed that modifying the deposition rate instead of modifying the surface by sintering provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the platinum substrate as taught by Brennen because both fractalized platinum materials are more robust than prior art platinum black materials. Therefore, it would have been an obvious matter of design choice to modify Brennen's invention to obtain the invention as specified in the claims.

24. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brennen. Brennen discloses the essential features of the claimed invention except for a surface roughened by sandblasting. It is well known in the art to roughen implants by sandblasting to cheaply improve adhesion to other materials, tissue, or lower contact impedance. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to roughen the electrodes of Brennen by sandblasting to cheaply improve adhesion to other materials, tissue, or lower contact impedance.

Art Unit: 3762

25. Claims 22, 24-26, 28, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chow. Chow discloses the essential features of the claimed invention except for a substrate/gradient composition of platinum gray, a substrate surface that is rough/sandblasted/abraded, or an electroplated gradient composition. It is well known in the electrode arts to provide a substrate/gradient composition of platinum gray, a substrate surface that is rough/sandblasted/abraded, or an electroplated gradient composition to provide the predictable results of improved adhesion between substrate and surface material and a surface material that readily fills the intestacies of the substrate material. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a substrate/gradient composition of platinum gray, a substrate surface that is rough/sandblasted/abraded, or an electroplated gradient composition to provide the predictable results of improved adhesion between substrate and surface material and a surface material that readily fills the intestacies of the substrate material.

26. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chow in view of Fabian. Chow discloses the essential features of the claimed invention except for a linear gradient from platinum to iridium oxide. Fabian teaches an electrode with an approximately linear gradient from interior to exterior (Table I) to provide the predictable result of conserving costly electrode materials and provide mechanical strength. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Chow's invention with an approximately linear

Art Unit: 3762

gradient from platinum to iridium oxide to provide the predictable result of conserving costly electrode materials and provide mechanical strength.

Response to Arguments

27. Applicant's arguments with respect to claims 21, 22, 24-26, and 28-33 have been considered but are moot in view of the new ground(s) of rejection, necessitated by amendment. In regards to the new limitation of "a plurality of alternating layers," please see the details above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL KAHRELIN whose telephone number is (571)272-8688. The examiner can normally be reached on M-F, 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on (571) 272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3762

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MWK

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2/7/08

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GEORGE R. EVANISKO
PRIMARY EXAMINER

2/8/08